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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.	
09/887,117	06/25/2001	Jang-Kun Song	06192.0177.NPUS00	7333	
7590	05/20/2004	EXAMINER			
LIU, MING HUN					
		ART UNIT	PAPER NUMBER		
		2675		9	

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

	Application No.	Applicant(s)
	09/887,117	SONG ET AL.
	Examiner Ming-Hun Liu	Art Unit 2675

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 23-33 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 23-33 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____. | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 33 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Nowhere in the specification does the applicant teach the use of sub-pixels.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 27-29 are rejected under 35 U.S.C. 102(b) as being unpatentable by US Patent 5,926,161 to Furuhashi et al.

In reference to claim 27, it can be seen from figure 12 of Furuhashi that his invention includes a plurality of gate lines in the row direction, a plurality of data lines in the column direction, and also a plurality of common electrode lines in the column direction, where the data lines and the common lines are alternately positioned. Furthermore, Furuhashi's invention

Art Unit: 2675

includes a plurality or pixels with LCD and storage capacity connected from the switch to the common line.

As to claim 28, by referring to column 24, lines 29-42, Furuhashi teaches an invention where the polarity of Vd is changed from positive to negative, when the common is maintained at a low. Similarly, Furuhashi also teaches that the polarity of Vd is changed from negative to positive, the common line is maintained at a high level.

In reference to claim 29, it is also clear from figure 12 and disclosure on column 7, lines 14-23 that the common voltages in neighboring common lines have inverted waveforms.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 23-26 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuhashi.

In reference to claims 23 and 30, it can be seen from figure 12 of Furuhashi teaches an invention similar to the one being claimed. Furuhashi shows gate lines extending in one direction, and the data lines extending in a second direction with a plurality of common electrode lines where portions (but not all of) of the common electrode lines extend in the first direction. The pixels are arranged in matrix form with a switching element (item 117) with a storage

Art Unit: 2675

capacitor (item 118) connected to the switch. Finally the storage capacitors are alternately connected to the neighboring electrodes.

Furuhashi's invention is similar to the one being claimed, however the exact layout of the common electrode lines are not the same as the disclosed invention. However the pixel connections to the common electrodes of the two inventions are essentially the same. There is no disclosed criticality as to why the lines must be laid out in the claimed fashion. One skilled in the art could have laid the common electrode lines primarily in the first direction instead of the second direction. The spirit of Furuhashi's invention and the claimed invention are nearly identical allowing different common references to the alternating pixels.

In reference to claims 24 and 31, by referring to column 24, lines 29-42, Furuhashi teaches an invention where the polarity of Vd is changed from positive to negative, when the common is maintained at a low. Similarly, Furuhashi also teaches that the polarity of Vd is changed from negative to positive, the common line is maintained at a high level.

In reference to claim 25, it is clear from figure 12 and disclosure on column 7, lines 14-23 that the common voltages in neighboring common lines have inverted waveforms.

In reference to claim 26, Furuhashi teaches on column 7, lines 59-65 that the common voltages applied to the first common electrode line is generated by inverting the common electrode's signal phase of the neighboring common electrode signal.

In reference to claim 32, is rejected on the grounds presented in the rejection of claim 26.

Response to Arguments

7. The election requirement assigned in office action 7, dated 2/9/04 has been removed.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent 6,489,952 to Tanaka et al.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 2675

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ming-Hun Liu whose telephone number is 703-305-8488. The examiner can normally be reached on Mon-Fri.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ming-Hun Liu



DENNIS-DOON CHOW
PRIMARY EXAMINER